



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : B01D 53/34, 53/88, 53/92, 53/94		A1	(11) International Publication Number: WO 00/43105
			(43) International Publication Date: 27 July 2000 (27.07.00)
<p>(21) International Application Number: PCT/US00/01499</p> <p>(22) International Filing Date: 21 January 2000 (21.01.00)</p> <p>(30) Priority Data: 60/116,828 22 January 1999 (22.01.99) US</p> <p>(71) Applicant (for all designated States except US): BENTELER AUTOMOTIVE CORPORATION [US/US]; Suite 500, 50 Monroe Avenue, N.W., Grand Rapids, MI 49503-2656 (US).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): BIEL, John, P., Jr. [US/US]; 2433 Belknap Avenue, N.E., Grand Rapids, MI 49505 (US). HILL, Frederick, B., Jr. [US/US]; 6748 Knollcrest, Rockford, MI 49341 (US). MEWS, Lance [US/US]; 4640 6th Street, Caledonia, MI 49316 (US). RIGSBY, Donald, R. [US/US]; 1923 Mulberry Lane, Jenison, MI 49428 (US).</p> <p>(74) Agent: CARRIER, Robert, J.; Price, Heneveld, Cooper, De Witt & Litton, 695 Kenmoor, S.E., P.O. Box 2567, Grand Rapids, MI 49501 (US).</p>		<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CI, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p>	
<p>(54) Title: VACUUM-INSULATED EXHAUST TREATMENT DEVICES WITH RADIALLY-EXTENDING SUPPORT STRUCTURES</p>			
<p>(57) Abstract</p> <p>An exhaust treatment device, such as a catalytic converter assembly (20) for vehicles includes an inner housing (21) having an inlet and an outlet defining a longitudinal direction (63) and having a catalytic material (27, 27') therein chosen to reduce undesirable emissions from the exhaust of a combustion engine as the exhaust passes from the inlet to the outlet. The catalytic converter assembly (20) further includes an outer housing (22) enclosing the inner housing (21) but characteristically not contacting the inner housing (21), the outer housing (22) including an inlet and an outlet that align with the inlet and outlet of the inner housing (21), the inner and outer housing (21, 22) including walls (30, 31) forming a sealed cavity (26) around the inner housing (21), the cavity (26) having a vacuum drawn therein. The catalytic converter assembly (20) further includes supports (25) of various configurations and materials that extend radially between the inner and outer housings (21, 22).</p>			